

What is claimed is:

1 1. A method for selecting a chrominance portion of a pixel to be watermarked,
2 said selecting step employing a perception-based table that indicates for each of at least a
3 plurality of possible pixels in a colorspace which, if any, of the chrominance portions
4 should be selected for watermarking.

1 2. The invention as defined in claim 1 wherein said perception-based table
2 indicates for each entry therein whether to watermark only a first chrominance portion or
3 only a second chrominance portion.

1 3. The invention as defined in claim 1 wherein said perception-based table
2 indicates for each entry therein whether to watermark a first chrominance portion, a
3 second chrominance portion, or not to watermark at all.

1 4. The invention as defined in claim 1 wherein said perception-based table is in
2 computer readable form.

1 5. The invention as defined in claim 1 wherein said perception-based table
2 divides an entire colorspace into regions, at least one of said possible pixels within each
3 said region, and said perception-based table supplies an indication for said pixel based on
4 which region of said perception-based table said pixel falls.

1 6. The invention as defined in claim 1 wherein said pixel is part of a digital video
2 bitstream represented in YUV format and wherein said perception-based table indicates
3 for any pixel to watermark U or V as a function of the Y, U, and V values of said pixel.

1 7. The invention as defined in claim 1 wherein said pixel is part of a digital video
2 bitstream represented in YUV format, and wherein said selecting step is performed using
3 only said YUV formatted digital bitstream directly and no other version of said digital
4 bitstream formatted in any other format.

1 8. The invention as defined in claim 1 wherein said pixel is part of a digital video
2 bitstream represented using a first colorspace type representation, and wherein, said
3 selecting step is performed using only a digital bitstream formatted in said first colorspace
4 type representation directly and other colorspace type representation.

1 9. The invention as defined in claim 1 wherein said pixel is a decimated pixel
2 derived from an original digital video bitstream.

1 10. The invention as defined in claim 1 wherein said pixel is a decimated pixel
2 derived from an original digital video bitstream represented in YUV format,

1 11. The invention as defined in claim 1 wherein said pixel is a quantized pixel
2 derived from an original digital video bitstream.

1 12. The invention as defined in claim 1 wherein said pixel is a quantized pixel
2 derived from an original digital video bitstream represented in YUV format,

1 13. The invention as defined in claim 1 wherein said perception-based table
2 contains information to indicate which, if any, of the chrominance portions should be
3 selected for watermarking for each pixel value of the entirety of said colorspace.

1 14. The invention as defined in claim 1 wherein said perception-based table
2 contains information to indicate which, if any, of the chrominance portions should be
3 selected for watermarking for each possible pixel of only a prescribed portion of said
4 colorspace, and wherein said selecting step further comprises the step of determining that
5 a pixel is within said prescribed portion of said colorspace for which said perception-
6 based table contains information.

1 15. The invention as defined in claim 1 wherein said perception-based table
2 contains information to indicate which, if any, of the chrominance portions should be
3 selected for watermarking for each possible pixel of only a portion of said colorspace, and
4 wherein said method further comprises the steps of:

5 determining that a pixel is not within said portion of said colorspace for which
6 said perception-based table contains information; and

7 determining which, if any, of the chrominance portions should be selected for
8 watermarking for said pixel, as a computed function of at least one value of said pixel.

1 16. The invention as defined in claim 1 wherein a chrominance portion of said
2 pixel is watermarked by having its value changed to represent the conveyance of
3 additional data other than the original value of said chrominance portion.

1 17. Apparatus for supplying an indication as to which chrominance portion of a
2 pixel of a video signal, if any, is better suited to be altered so as to carry additional
3 watermark information, said apparatus comprising a perception-based table in a computer
4 readable media for at least a portion of the possible pixel colorspace, said table specifying
5 for pixels that are within said portion of said colorspace the chrominance portion to be
6 indicated by said apparatus.

1 18. The invention as defined in claim 17 further comprising a computation unit
2 for indicating for a pixel that is not within said portion of said colorspace which
3 chrominance portion is to be indicated based on at least a value of one of said
4 chrominance portions of said pixel.

1 19. The invention as defined in claim 17 wherein said chrominance portion is
2 better suited to be altered when altering said chrominance portion will produce less, if
3 any, visible artifact than altering any other chrominance portion of said pixel.

1 20. A method for selecting a chrominance portion of a pixel to be watermarked,
2 said selecting step employing a perception-based table that indicates for each of at least a
3 plurality of possible pixels in a colorspace which, if any, of the chrominance portions
4 most likely had watermark data added thereto.

1 21. Apparatus for selecting a chrominance portion of a pixel to be watermarked,
2 said apparatus comprising a perception-based table in a computer readable medium that
3 indicates for each of at least a plurality of possible pixels in at least a portion of a
4 colorspace which, if any, of the chrominance portions would be least likely to introduce a
5 visible artifact should watermark data be added thereto.

1 22. Apparatus for selecting a chrominance portion of a pixel to be watermarked,
2 said apparatus comprising:
3 a computer readable store containing a perception-based table that indicates for
4 each of at least a plurality of possible pixels in at least a portion of a colorspace which, if
5 any, of the chrominance portions should be selected for watermarking; and
6 means for accessing said store to determine which chrominance portion, if any, to
7 select, when said pixel is one of said pixels in said portion of said colorspace.

1 23. The invention as defined in claim 22 further comprising means for
2 computing as a function of a least one value of said pixel which, if any, of the
3 chrominance portions should be selected for watermarking, said means for computing
4 operating only when said pixel is not one of said pixels in said portion of said colorspace.

1 24. Apparatus for selecting a chrominance portion of a pixel to be watermarked,
2 said apparatus comprising:
3 a computer readable store containing a perception-based table that indicates for
4 each of at least a plurality of possible pixels in at least a portion of a colorspace which, if
5 any, of the chrominance portions most likely had watermarking data added thereto; and
6 means for accessing said store to determine which chrominance portion, if any, to
7 select, when said pixel is one of said pixels in said portion of said colorspace